

**Meeting of the Central Valley Flood Protection Board
June 20, 2008**

**Draft Staff Report
DWR Floodway Protection Section**

Item

Consider approval of Permit No. 18081-Rev to construct approximately 1500 additional linear feet of soil-cement-bentonite slurry wall in the right (north) bank levee of the Bear River.

Applicant

Reclamation District No. 2103

Location

The project is located in Yuba County south of Wheatland, both east and west of Highway 65 (see Attachment B).

Description

To construct an additional 1500 linear feet (original project had 16,000 linear feet but modified project has 17,500 feet) of soil-cement-bentonite slurry wall; to construct a seepage/stability berm; and remove and replace four existing water pipes through the levee on the right (north) bank levee of the Bear River.

Agency Comments and Endorsements:

- The U. S. Army Corps of Engineers has endorsed this application (Exhibit A).
- Reclamation District 2103 has endorsed this application.

CEQA Compliance:

An Initial Study with Intent to Adopt a Mitigated Negative Declaration for Bear River North and Grasshopper Slough Levees Rehabilitation Project was prepared by RD 2103 May 19, 2006.

The RD 2103 Board determined that the project would not have a significant effect on the environment and adopted Resolution 2006-01 *Considering and Approving the Mitigated Negative Declaration for the Bear River North and Grasshopper Slough Levee Rehabilitation Project* on June 15, 2006. A Notice of Determination was filed with Yuba County Clerk's Office and State Clearinghouse (SCN 2006052136) on June 21, 2006. RD 2103 prepared mitigation measures as a condition of project approval, and developed a mitigation reporting and monitoring plan.

The State Reclamation Board issued permit 18081GM on July 31, 2006.

On December 21, 2007 RD 2103 submitted *Request for Amendment, Reclamation Board Permit No. 18081GM, Bear River North Levee Rehabilitation Project*. Project modifications were addressed in accordance with CEQA guidelines sections 15164(b), (c), and (d) by preparing an addendum to the Mitigated Negative Declaration on August 3, 2007.

As a Responsible Agency under CEQA, Central Valley Flood Protection Board staff reviewed the *Initial Study and Mitigated Negative Declaration* and the *Addendum to the Mitigated Negative Declaration (MND) for the Bear River Levee North and Grasshopper Slough Rehabilitation Project (SCH#2006052136)*.

Based on review of these documents Board staff finds that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by RD 2103.

Mandatory mitigation measures have been incorporated into the project plans to avoid identified impacts or to mitigate such impacts to a point where clearly no significant impacts will occur. The potential significant impacts and the mitigation measures that will reduce them to less than significant are included in the Initial Study (May, 2006) and address impacts air quality, biological resources, cultural resources, hazards and hazardous materials, hydrology and water quality, noise, and transportation/traffic.

Board staff further finds that:

- the amendments to the MND demonstrate that the circumstances, impacts, and mitigation requirements identified in the MND remain applicable to the project with proposed revisions
- supports the finding that the proposed project does not raise any new effects

- does not substantially increase the severity of impacts identified in the MND
- there has been no substantial change in the in the circumstances surrounding the project
- changes do not include new information indicating that any mitigation measures or alternatives previously found not to be feasible are now considered feasible

Section 8610.5 Compliance

1. Evidence that the Board admits into its record from any party, State or local public agency, or nongovernmental organization with expertise in flood or flood plain management:

The Board will make its decision based on the evidence in the permit application and attachments, this staff report, and any other evidence presented by any individual or group.

2. The best available science that related to the scientific issues presented by the executive officer, legal counsel, the Department or other parties that raise credible scientific issues.

The accepted industry standards for the work proposed under this permit as regulated by Title 23 have been applied to the review of this permit.

3. Effects of the decision on the entire State Plan of Flood Control:

This project has positive effects on the State Plan of Flood Control.

4. Effects of reasonable projected future events, including, but not limited to, changes in hydrology, climate, and development within the applicable watershed:

None.

Staff Recommendation

Staff recommends that the Board adopt the CEQA findings and approve the permit.

List of Attachments

- A. Draft Permit
- B. Location maps and photos

DRAFT

STATE OF CALIFORNIA
THE RESOURCES AGENCY
CENTRAL VALLEY FLOOD PROTECTION BOARD

PERMIT NO. 18081-Rev BD

This Permit is issued to:

Reclamation District No. 2103
1758 Oakley Avenue
Wheatland, California 95692

To construct approximately 17,500 linear feet of soil-cement-bentonite slurry wall; to construct a seepage/stability berm approximately 100 feet long, 10 feet wide, and 6 feet high; and remove and replace four existing 24-inch-diameter water pipes through the levee on the right (north) bank levee of the Bear River. The project is located south of Wheatland, both east and west of Highway 65 (Section 25,35,36,2,3,8,9,10, T14N, R5E, MDB&M, Reclamation District 2103, Bear River, Yuba County).

NOTE: Special Conditions have been incorporated herein which may place limitations on and/or require modification of your proposed project described above.

(SEAL)

Dated: _____

Executive Officer

GENERAL CONDITIONS:

ONE: This permit is issued under the provisions of Sections 8700 – 8723 of the Water Code.

TWO: Only work described in the subject application is authorized hereby.

THREE: This permit does not grant a right to use or construct works on land owned by the Sacramento and San Joaquin Drainage District or on any other land.

FOUR: The approved work shall be accomplished under the direction and supervision of the State Department of Water Resources, and the permittee shall conform to all requirements of the Department and the Central Valley Flood Protection Board.

FIVE: Unless the work herein contemplated shall have been commenced within one year after issuance of this permit, the Board reserves the right to change any conditions in this permit as may be consistent with current flood control standards and policies of the Central Valley Flood Protection Board.

SIX: This permit shall remain in effect until revoked. In the event any conditions in this permit are not complied with, it may be revoked on 15 day's notice.

SEVEN: It is understood and agreed to by the permittee that the start of any work under this permit shall constitute an acceptance of the conditions in this permit and an agreement to perform work in accordance therewith.

EIGHT: This permit does not establish any precedent with respect to any other application received by the Central Valley Flood Protection Board.

NINE: The permittee shall, when required by law, secure the written order or consent from all other public agencies having jurisdiction.

TEN: The permittee is responsible for all personal liability and property damage which may arise out of failure on the permittee's part to perform the obligations under this permit. If any claim of liability is made against the State of California, or any departments thereof, the United States of America, a local district or other maintaining agencies and the officers, agents or employees thereof, the permittee shall defend and shall hold each of them harmless from each claim.

ELEVEN: The permittee shall exercise reasonable care to operate and maintain any work authorized herein to preclude injury to or damage to any works necessary to any plan of flood control adopted by the Board or the Legislature, or interfere with the successful execution, functioning or operation of any plan of flood control adopted by the Board or the Legislature.

TWELVE: Should any of the work not conform to the conditions of this permit, the permittee, upon order of the Central Valley Flood Protection Board, shall in the manner prescribed by the Board be responsible for the cost and expense to remove, alter, relocate, or reconstruct all or any part of the work herein approved.

SPECIAL CONDITIONS FOR PERMIT NO. 18081-Rev BD

THIRTEEN: Prior to construction, the permittee shall provide the Sacramento and San Joaquin Drainage District, acting by and through the Central Valley Flood Protection Board of the State of California, a permanent easement granting all flood control rights upon, over and across the property to be occupied by the existing or to-be-constructed levee. The easement must include the area within the floodway, the levee section, and the area ten (10) feet in width adjacent to the landward levee toe if the area is not presently encumbered by a Central Valley Flood Protection Board easement. For information regarding existing Central Valley Flood Protection Board easements and required easements, please contact Linus Paulus at (916) 653-3947.

FOURTEEN: All work approved by this permit shall be in accordance with the submitted drawings and specifications except as modified by special permit conditions herein. No further work, other than that approved by this permit, shall be done in the area without prior approval of the Central Valley Flood Protection Board.

FIFTEEN: The permittee shall maintain the permitted encroachment(s) and the project works within the utilized area in the manner required and as requested by the authorized representative of the Department of Water Resources or any other agency responsible for maintenance.

SIXTEEN: The permittee shall contact the Department of Water Resources by telephone, (916) 574-1213, and submit the enclosed postcard to schedule a preconstruction conference. Failure to do so at least 10 working days prior to start of work may result in delay of the project.

SEVENTEEN: The permittee shall provide supervision and inspection services acceptable to the

Central Valley Flood Protection Board. A professional engineer registered in the State of California shall certify that all work was inspected and performed in accordance with submitted drawings, specifications, and permit conditions.

EIGHTEEN: If FEMA certification of the levee by the Corps is being considered, the project proponent should contact the U. S. Army Corps of Engineers regarding inspection of the project during construction.

NINETEEN: The central Valley Flood Protection Board and the Department of Water Resources shall not be held liable for any damages to the permitted encroachment(s) resulting from flood fight, operation, maintenance, inspection, or emergency repair.

TWENTY: The permittee may be required, at permittee's cost and expense, to remove, alter, relocate, or reconstruct all or any part of the permitted encroachment(s) if removal, alteration, relocation, or reconstruction is necessary as part of or in conjunction with any present or future flood control plan or project or if damaged by any cause. If the permittee does not comply, the Central Valley Flood Protection Board may remove the encroachment(s) at the permittee's expense.

TWENTY-ONE: The permittee should contact the U.S. Army Corps of Engineers, Sacramento District, Regulatory Branch, 1325 J Street, Sacramento, California 95814, telephone (916) 557-5250, as compliance with Section 10 of the Rivers and Harbors Act and/or Section 404 of the Clean Water Act may be required.

TWENTY-TWO: The permittee shall be responsible for repair of any damages to the project levee and other flood control facilities due to construction, operation, or maintenance of the proposed project.

TWENTY-THREE: The permittee is responsible for all liability associated with construction, operation, and maintenance of the permitted facilities and shall defend and hold harmless the State of California, or any departments thereof, from any liability or claims of liability associated therewith.

TWENTY-FOUR: If the project, or any portion thereof, is to be abandoned in the future, the permittee or successor shall abandon the project under direction of the Central Valley Flood Protection Board and Department of Water Resources, at the permittee's or successor's cost and expense.

TWENTY-FIVE: Upon completion of the project, the permittee shall submit as-built drawings to: Department of Water Resources, Flood Project Inspection Section, 3310 El Camino Avenue, Suite LL30, Sacramento, California 95821.

TWENTY-SIX: No construction work of any kind shall be done during the flood season from November 1 to April 15 without prior approval of the Central Valley Flood Protection Board.

TWENTY-SEVEN: Cleared trees and brush shall be completely burned or removed from the floodway, and downed trees or brush shall not remain in the floodway during the flood season from November 1 to April 15.

TWENTY-EIGHT: No material stockpiles, temporary buildings, or equipment shall remain in the floodway during the flood season from November 1 to April 15.

TWENTY-NINE: The permitted encroachment(s) shall not interfere with operation and maintenance of the flood control project. If the permitted encroachment(s) are determined by any agency responsible for operation or maintenance of the flood control project to interfere, the permittee shall be required, at permittee's cost and expense, to modify or remove the permitted encroachment(s) under direction of the Central Valley Flood Protection Board or Department of Water Resources. If the permittee does not comply, the Central Valley Flood Protection Board may modify or remove the encroachment(s) at the permittee's expense.

THIRTY: Excavations below the design flood plane and within the levee section or within 10 feet of the projected waterward and landward levee slopes shall have side slopes no steeper than 1 horizontal to 1 vertical. Flatter slopes may be required to ensure stability of the excavation.

THIRTY-ONE: The stability of the levee shall be maintained at all times.

THIRTY-TWO: During construction of the project, any and all anticipated or unanticipated conditions encountered which may impact levee integrity or flood control shall be brought to the attention of the Flood Project Inspector immediately and prior to continuation. Any encountered abandoned encroachments shall be completely removed or properly abandoned under the direction of the Flood Project Integrity and Inspection Branch Inspector.

THIRTY-THREE: A profile of the levee crown roadway and all access ramps that will be utilized for access to and from the project shall be submitted to the Central Valley Flood Protection Board prior to commencement of excavation.

THIRTY-FOUR: Any access ramps and utilized levee crown roadway shall be maintained in a manner prescribed by the authorized representative of the Department of Water Resources.

THIRTY-FIVE: Any damage to the levee crown roadway or access ramps that will be utilized for access for this project shall be promptly repaired to the condition that existed prior to this project.

THIRTY-SIX: Equipment used in the construction of the slurry wall shall not exceed live-load surcharge to a level that causes or contributes to the instability of the levee during construction operations.

THIRTY-SEVEN: Fluid pressures and flow rates shall be carefully monitored and controlled to minimize the potential for hydrofracturing.

THIRTY-EIGHT: The permittee shall be responsible for all damages due to settlement, consolidation, or heave from any construction-induced activities.

THIRTY-NINE: Excess bentonite or other slurry fluids shall be properly disposed of outside of the floodway. The bentonite or other slurry fluids shall not be used as backfill.

FORTY: Restoration of degraded levee shall not begin until slurry wall has cured for 7 days and reached a minimum compressive strength of 300 psi or as allowed by the Corps.

FORTY-ONE: All fencing, gates and signs removed during construction of this project shall be

replaced in kind and at the original locations. If it is necessary to relocate any fence, gate or sign, the permittee is required to obtain written approval from the Central Valley Flood Protection Board prior to installation at a new location.

FORTY-TWO: All temporary fencing, gates and signs shall be removed upon completion of project.

FORTY-THREE: All pipe or conduit being reinstalled in the levee section and within 10 feet of both the waterward and landward levee toes shall meet Title 23 standards.

FORTY-FOUR: Backfill within the levee sections shall be keyed into the existing levee sections with each lift.

FORTY-FIVE: All pipes shall be placed in the center of an open trench 2 feet wider than the diameter of the pipe.

FORTY-SIX: The pipes shall be placed in an open cut with side slopes of 1 horizontal to 1 vertical or flatter.

FORTY-SEVEN: Pipes shall be inspected prior to installation to ensure no cracked, broken, or defective materials are used.

FORTY-EIGHT: The pipes shall be installed through the levee section at a right angle to the centerline of the levee.

FORTY-NINE: Backfill material for excavations within the levee section and within 10 feet of the levee toes shall be placed in 4- to 6-inch layers, moisture conditioned above optimum moisture content, and compacted to a minimum of 90 percent relative compaction as measured by ASTM Method D1557-91.

FIFTY: Density tests by a certified materials laboratory will be required to verify compaction of backfill within the levee section and within 10 feet of the levee toes.

FIFTY-ONE: The reconstructed levee crown roadway shall be surfaced with a minimum of 4 inches of compacted, Class 2, aggregate base (Caltrans Specification 26-1.02A).

FIFTY-TWO: Aggregate base material shall be compacted to a relative compaction of not less than 95 percent per ASTM Method D1557-91, with a moisture content sufficient to obtain the required compaction.

FIFTY-THREE: The levee sections, access ramps and any encountered active utility crossings shall be restored to at least the condition that existed prior to commencement of work.

FIFTY-FOUR: All debris generated by this project shall be disposed of outside the floodway and off the levee sections.

FIFTY-FIVE: The permittee shall replant or reseed the levee slopes to restore sod, grass, or other non-woody ground covers if damaged during project work.

FIFTY-SIX: The seepage berm is considered a Flood Control Project feature and is subject to Title 23 California Code of Regulations.

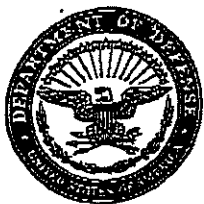
FIFTY-SEVEN: Debris that may accumulate on the permitted encroachment(s) and related facilities shall be cleared off and disposed of outside the floodway after each period of high water.

FIFTY-EIGHT: In the event existing revetment on the levee slope or channel bank is disturbed or displaced, it shall be restored to its original condition upon completion of the proposed installation.

FIFTY-NINE: In the event that levee or bank erosion injurious to the adopted plan of flood control occurs at or adjacent to the permitted encroachment(s), the permittee shall repair the eroded area and propose measures, to be approved by the Central Valley Flood Protection Board, to prevent further erosion.

SIXTY: The permittee shall comply with all conditions set forth in the letter from the Department of the Army dated July 20, 2006, which is attached to this permit as Exhibit A and is incorporated by reference.

SIXTY-ONE: Any additional encroachment(s) in the floodway, on or within the levee section or within 10 feet of the landward levee toe, require an approved permit from the Central Valley Flood Protection Board and shall be in compliance with the Central Valley Flood Protection Board's regulations (Title 23 California Code of Regulations).

REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEERS
1325 J STREET
SACRAMENTO, CALIFORNIA 95814-2922

July 20, 2006

Navigation and Flood Control Unit (18081)

General Manager
The Reclamation Board
State of California
3310 El Camino Ave. Rm. LL40
Sacramento, California 95821

Dear General Manager:

We have reviewed an application for a permit by Reclamation District Number 2103 (Reclamation Board Number 18081). These plans include constructing approximately 16,000 linear feet of soil-cement-bentonite slurry walls, widening approximately 1,500 linear feet of levee extending approximately 98 feet from existing landside toe, constructing a seepage/stability berm approximately 100-feet long, 10-feet wide and 6-feet high and removing and replacing four existing 24-inch diameter water pipes through the levee on the right (north) bank levee of the Bear River. The project is located south of Wheatland, both east and west of Highway 65 in Sections 2,3,8,9,10,25,35,36, Township 14 North, Range 5 East, M.D.B.&M. Survey, Yuba County, California.

The District Engineer has no objection to approval of this application by your Board from a flood control standpoint subject to the following conditions:

- a. That the excavation in the project for the proposed work shall not be made or remain during the flood season of November 1 to April 15, unless otherwise approved in writing by your Board.
- b. That in the event trees and brush are cleared, they shall be properly disposed of by either complete burning or complete removal outside the limits of the project works.
- c. That after the installation of the slurry cutoff wall, the levee shall be reconstructed to the profile shown in the O&M Manual or the height before construction, whichever is higher.
- d. That the reconstructed levee crown shall have an all-weather surface.
- e. That any revetment that may have been removed by the project be reinstalled.
- f. That in the event erosion occurs at the site, the applicant shall repair the eroded areas and place adequate revetment on the riverbank to prevent future erosion.

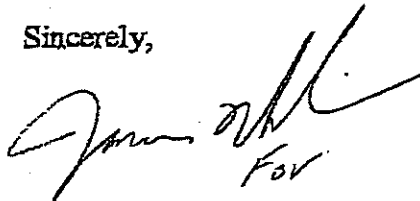
- g. That the project levee section and roadway shall be restored to at least the same condition as existed prior to commencement of the proposed work.
- h. That the four abandoned pipes shall be completely removed from the project works unless otherwise approved in writing by your Board.
- i. That all area to receive fill shall be cleared of all vegetation prior to fill placement.
- j. That drainage from the fill area shall be sloped to drain away from the project levee.
- k. That the applicant shall repair any damage caused to the levee during placement of the fill.

In addition to the above comments, I have attached comments from our Geotechnical Section, CESP-K-ED-GS, that should be addressed by the applicant.

A file (200600483) has been opened because a Section 10 and/or Section 404 permit may be required. Please advise the applicant to contact the U.S. Army Corps of Engineers, Sacramento District, Regulatory Branch, 1325 J Street, Sacramento California 95814, telephone (916) 557-5250.

If you have any questions concerning our comments on this permit application, please contact Mr. Mohsen Tavana at (916) 557-5282 or Mr. Robert Murakami at (916) 557-6738.

Sincerely,

A handwritten signature in dark ink, appearing to read "Michael D. Mahoney", with a stylized flourish at the end.

Michael D. Mahoney, P.E.
Chief, Construction-Operations Division

Enclosure

CF:

Mr. Tirath Pal Sandhu, Chief, Flood Project Integrity and Inspection Branch,
3310 El Camino Avenue, Suite LL30, Sacramento, CA 95821

CESPK-ED-GS

19 July 2006

Geotechnical Review of Reclamation Board Permit No. 18081
Applicant: Reclamation District 2103

References

California Reclamation Board Encroachment Application Detail Report, 5 May 2006.

30% Drawings for Bear River North Levee Rehabilitation Project, Reclamation District No. 2103.

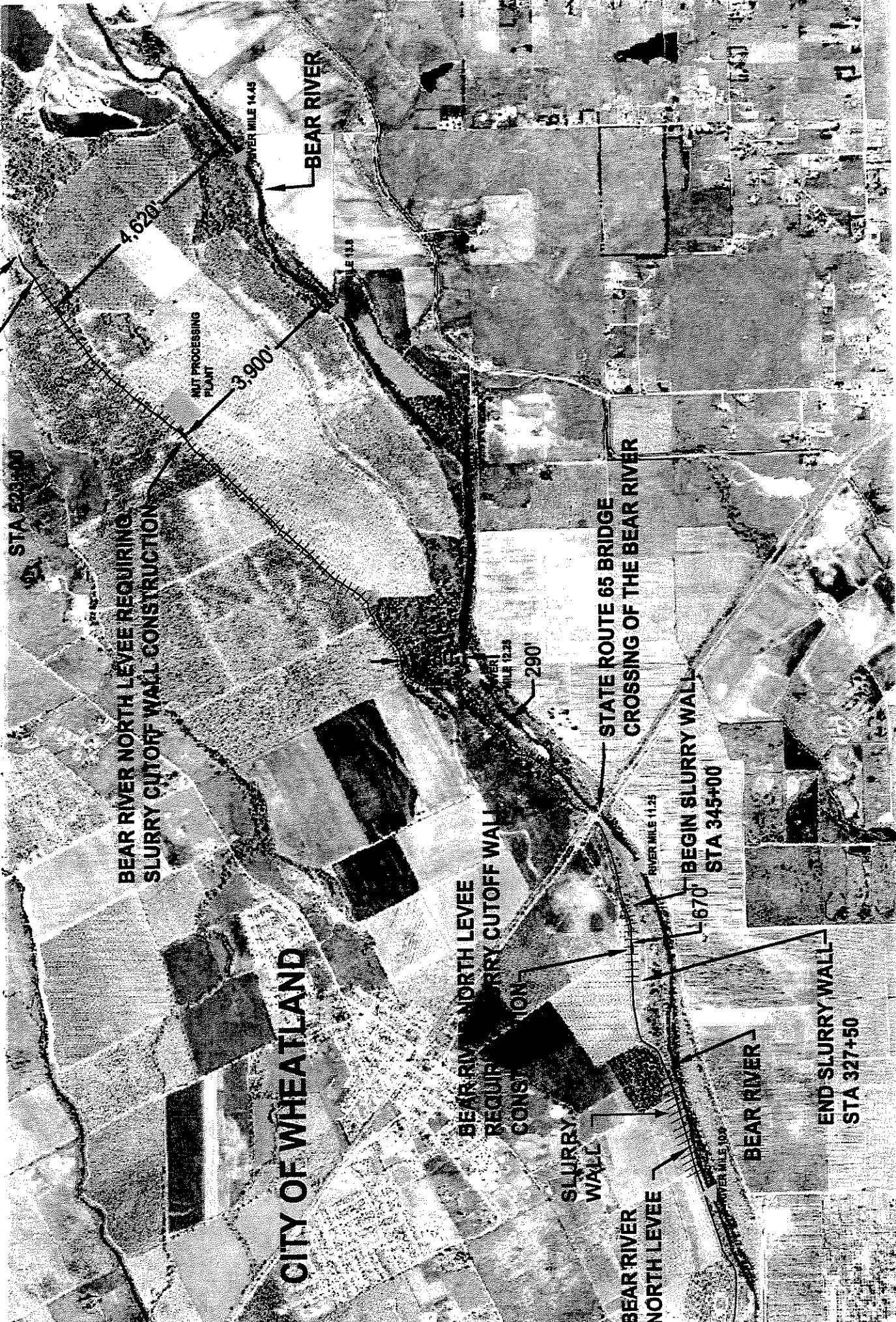
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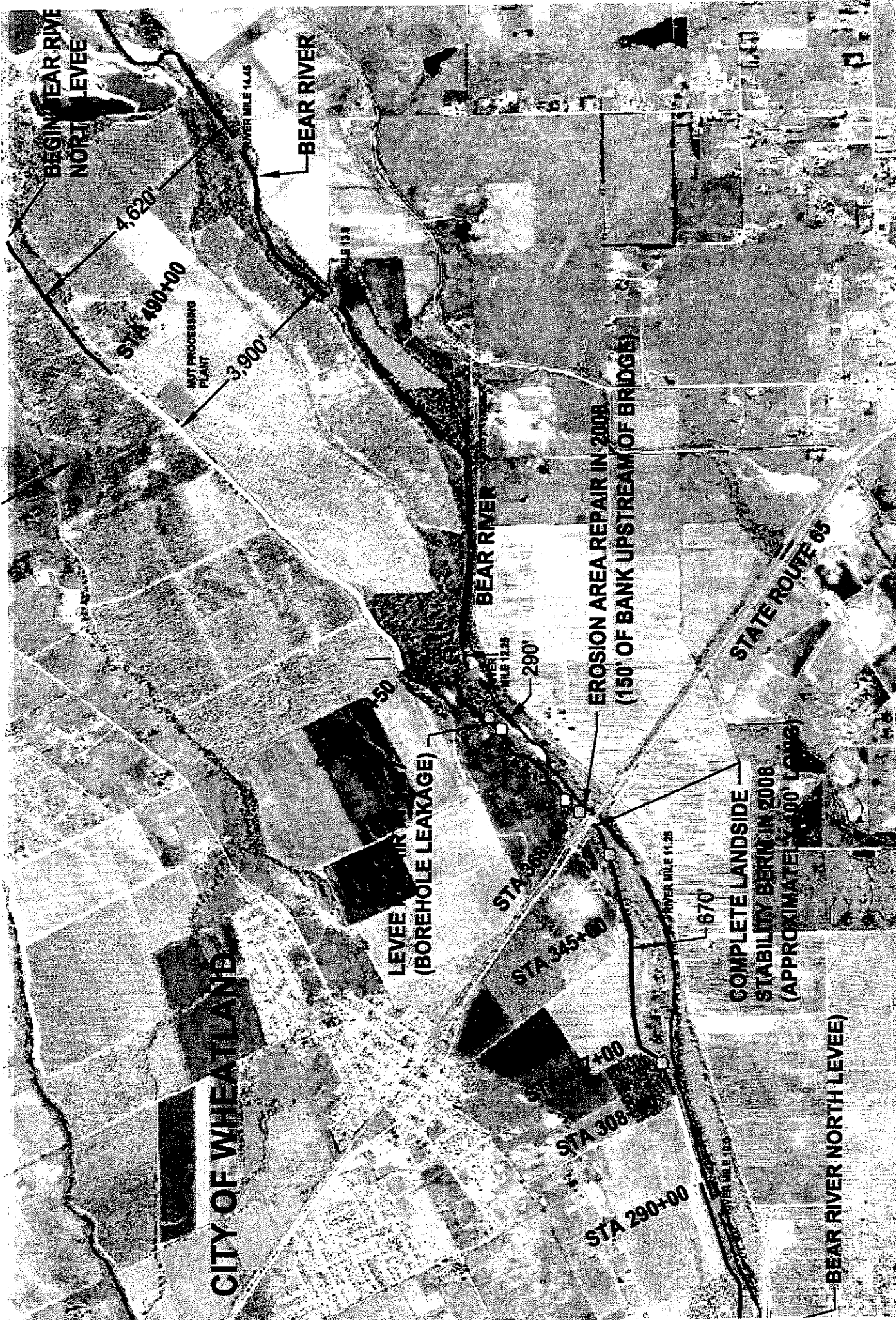
The work proposed under Reclamation Board Permit No. 18081 includes installation of approximately 16,000 linear feet of soil-cement-bentonite slurry wall, widening of approximately 1,500 linear feet of levee, construction of a 100-foot long stability berm, and removal and replacement of four 24-inch diameter pipes with reinforced concrete pipes. The proposed work is located along the right (north) bank Bear River levee. The levee is designated as Unit 2 of Reclamation District 2103.

Review Comments

1. The levee and appurtenances shall be restored as a minimum to its pre-project condition after construction.
2. Borrow sites shall be no closer than 500 feet to the landside and waterside levee toe.
3. The slurry wall backfill material shall be composed of a soil-cement-bentonite (SCB) mixture. The SCB backfill shall have a maximum 28-day hydraulic conductivity of 5×10^{-7} cm/sec, minimum 28-day unconfined compression strength of 30 psi, and maximum 28-day unconfined compression strength of 300 psi.
4. The material for the slurry wall cap shall have minimum 30% fines (material passing the No. 200 sieve), a maximum particle size of 1-inch, a maximum liquid limit of 45, and a plasticity index of at least 8. The slurry wall cap shall be compacted to a minimum 95% of the maximum dry density as determined by ASTM D698 at a moisture content of plus/minus 2% of the optimum moisture content.
5. The widened levee located between Sta 288+00 and 303+00 shall be constructed of earth fill containing a minimum 20% fines (material passing the No. 200 sieve), a maximum particle size of 2 inches, a maximum liquid limit of 45, and a plasticity index of at least 8. The levee fill shall be compacted to a minimum 95% of the maximum dry density as determined by ASTM D698 at a moisture content of plus/minus 2% of the optimum moisture content.
6. The top elevation of the widened levee shall have a minimum overbuilt equal to the amount of estimated post-construction settlement.

7. The materials encountered along the invert and side walls of the inspection trench under the widened levee section shall be classified in accordance to ASTM D2488 by a licensed civil engineer, geotechnical engineer, or geologist. The profile of the inspection trench including the classification of materials encountered shall be included in the as-built drawings.
8. The materials encountered during the slurry wall excavation shall be classified in accordance to ASTM D2488 by a licensed civil engineer, geotechnical engineer, or geologist. The profile of the slurry wall including the classification of materials encountered shall be included in the as-built drawings.
9. The drain rock material of the widened levee toe drain shall meet filter criteria with the levee fill or a filter must be provided between the levee fill and drain rock.
10. Details for the reinforced concrete water supply pipes should be provided to the Corps for review. Details should include a cross section of the pipe crossing, excavation lines, description of backfill materials (including pipe bedding material), and details of the pipe joints.
11. The bedding under the reinforced concrete water supply pipes shall consist of either control-low strength material (CLSM) or lean mix concrete. The CLSM or lean mix concrete shall have a 28-day compressive strength of between 50 and 200 psi and 28-day hydraulic conductivity of 10^{-5} cm/sec or less.
12. The explorations presented in the permit application indicate that the levee is primarily composed of loose sand and silty sand. Levees composed of loose sands and silty sand are prone to cracking due to the hydrostatic pressure of the slurry during construction of a slurry wall by the open slurry trench method if preventative measures are not taken. Sacramento District's practice is to degrade the levee by a minimum of one-third the levee height to reduce the risk of levee cracking. The permittee is advised to degrade the levee a minimum of one-third the levee height to reduce the risk of cracking the levee. In addition, the length of open slurry trench should be minimize. The maximum length of open slurry trench is govern by requiring that the distance between the toe of the excavation and toe of the SCB backfill is a maximum of 100 feet.
13. Details should be provided for accommodation of the gas line at Sta 340+00 during levee degrading and slurry wall construction.
14. Reinforced concrete pipes shall be designed and constructed in accordance to the Corps' EM 1110-2-2902 Conduits, Culverts, and Pipes.





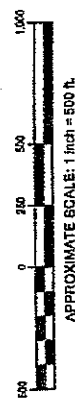
- Approximate Location of Trees to be Removed
- VALLEY OAK
- BLACK LOCUST
- CONSTRUCT SLURRY CUTOFF WALL (2007)
- CONSTRUCT SLURRY CUTOFF WALL (2008)
- NO LEVEE REHABILITATION REQUIRED



LEGEND

- Approximate Supplemental Exploration Location (2008)
- Approximate Exploration Location (Previous Studies, 2005)
- Approximate Exploration Location (Previous Studies, 1988)
- Approximate Exploration Location (Previous Study, 1992)

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KLEINFELDER

Drawn By: D. ROSS
Project No.: 076747

Date: 10/02/2008
Filename: 07674_B2

BORING LOCATION MAP
BEAR RIVER NORTH LEVEE
SUPPLEMENTAL GEOTECHNICAL INVESTIGATION
RECLAMATION DISTRICT 2103
YUBA, PLACER AND SUTTER COUNTIES, CALIFORNIA

PLATE

2A



LEGEND

- ① Approximate Supplemental Exploration Location (2003)
- ② Approximate Exploration Location (Previous Studies, 2005)
- ③ Approximate Exploration Location (Previous Studies, 1999)
- ④ Approximate Exploration Location (Previous Study, 1998)



KLEINFELDER

Drawn By: D. ROSS
Project No.: 676747

Date: 10/02/2006
Filename: 67674_B2

BORING LOCATION MAP
BEAR RIVER NORTH LEVEE
SUPPLEMENTAL GEOTECHNICAL INVESTIGATION
RECLAMATION DISTRICT 2103
YUBA, PLACER AND SUTTER COUNTIES, CALIFORNIA

PLATE
2B